

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A computer-implemented method of cell-based data processing comprising:
receiving a data processing specification comprising a plurality of cells, wherein each cell comprises a formula specifying an action or computation to perform when the cell is executed, and one or more attributes referencing other cells;
wherein each cell is delineated by a beginning and ending tag, and one of the cells is reserved as an output cell for outputting a result of the processing;
parsing the specification to determine an interdependency of the plurality of cells and generating and storing a directed graph of the interdependency as an execution flow; and
executing the specification in accordance with the execution flow, wherein the executing comprises evaluating the formula of each cell in the execution flow computing comprising:
receiving at execution time, a data processing specification having a first and a second data processing cell specification, unnested with respect to each other, specifying a first and a second data processing cell respectively, with each data processing cell specification having a plurality of statements including a formula specifying an action or computation, the first data processing cell having a data dependency on the second data processing cell, based on a reference to the second data processing cell in the formula that requires computation of the second data processing cell to evaluate the formula;
analyzing in real time, the data processing specification including the first and then the second data processing cell specification, to determine execution order of said

plurality of statements specified by said first data processing cell specification, based at least in part on interaction or computation references between said first and second data processing cells;

generating one or more execution flow descriptions describing the execution order of said plurality of statements of said first data processing cell specification based on results of the determination; and

upon completion of the analyzing and generating, effectuating the data processing specified by the data processing specification in accordance with the execution flow descriptions.

2. (Cancelled).

3. (Currently Amended) The method of claim 1, wherein said first data processing cell specification a first cell has a formula referencing a value of said second data processing cell specification a second cell.

4. (Cancelled).

5. (Currently Amended) The method of claim 43, wherein the first data processing cell has a first attribute referencing a second attribute of said second data processing cell.

6. (Currently Amended) The method of claim 43, wherein said second data processing cell specification comprises a reserved mnemonic for providing input to the data processing specified by the data processing specification.

7. (Currently Amended) The method of claim 43, wherein said first data processing cell specification is a reserved output cell specification specifying output of the data processing specified by the data processing specification.

8. (Currently Amended) The method of claim 4~~3~~, wherein said second data processing-cell specification comprises a conditionally executed formula.

9. (Original) The method of claim 1, wherein said data processing specification further includes one or more global attributes specifying one or more global processing characteristics for the specified data processing.

10. (Original) The method of claim 9, wherein said one or more global attributes include a global attribute specifying a format for providing the specified data processing with an HTTP request.

11. (Currently Amended) An apparatus comprising:
at least one storage unit having stored thereon programming instructions designed to:
receive a data processing specification comprising a plurality of cells, wherein each cell comprises a formula specifying an action or computation to perform when the cell is executed, and one or more attributes referencing other cells;
wherein each cell is delineated by a beginning and ending tag, and one of the cells is reserved as an output cell for outputting a result of the processing;
parse the specification to determine an interdependency of the plurality of cells and generating and storing a directed graph of the interdependency as an execution flow; and
execute the specification in accordance with the execution flow, wherein the executing comprises evaluating the formula of each cell in the execution flow~~receive at~~
~~execution time, a data processing specification having a first and a second data processing-cell specification, unnested with respect to each other, specifying a first and a second data processing cell, with each data processing cell specification having a plurality of statements including a formula specifying an action or computation, the first data processing cell having a data dependency on the second data processing cell~~

based on a reference to the second data processing cell in the formula that requires computation of the second data processing cell to evaluate the formula;

analyze in real time, the data processing specification in a first pass through of the data processing specification to determine an execution order of said plurality of statements specified by said first and second data processing cell specifications, based at least in part on interaction or computation references between said actions or computations specified;

generate one or more execution flow descriptions describing the execution order of said plurality of statements of said first data processing cell specification based on results of the determination; and

effectuate the data processing specified by the data processing specification, wherein the data processing specified by the data processing specification is executed in accordance with the execution flow descriptions; and at least one processor coupled to said at least one storage unit to execute said programming instructions.

12. (Cancelled).

13. (Currently Amended) The apparatus of claim 11, wherein said programming instructions are designed to support a said first data processing cell specification having a formula referencing a value of the second data processing cell specification.

14. (Cancelled).

15. (Currently Amended) The apparatus of claim ~~14~~13, wherein said programming instructions are designed to support the first data processing cell having a first attribute referencing a second attribute of said second data processing cell.

16. (Currently Amended) The apparatus of claim ~~14~~13, wherein said programming instructions are designed to support said second data processing cell

~~specification~~ having a reserved mnemonic for facilitating provision of input to the data processing specified by the data processing specification.

17. (Currently Amended) The apparatus of claim ~~44~~13, wherein said programming instructions are designed to support said first ~~data processing cell specification~~ being a reserved output cell specification specifying output of the data processing specified by the data processing specification.

18. (Currently Amended) The apparatus of claim ~~44~~13, wherein said programming instructions are designed to support said second ~~data processing cell specification~~ having a conditionally executed formula.

19. (Previously Presented) The apparatus of claim 11, wherein said programming instructions are designed to support said data processing specification having one or more global attributes specifying one or more global processing characteristics for the specified data processing.

20. (Original) The apparatus of claim 19, wherein said programming instructions are designed to support one of said one or more global attributes being a global attribute specifying a format for providing the specified data processing with an HTTP request.

21. (Currently Amended) A computer with a memory having stored thereon instructions that when executed cause to the computer to implement data processing comprising:

means for receiving a data processing specification comprising a plurality of cells, wherein each cell comprises a formula specifying an action or computation to perform when the cell is executed, and one or more attributes referencing other cells; wherein each cell is delineated by a beginning and ending tag, and one of the cells is reserved as an output cell for outputting a result of the processing;

means for parsing the specification to determine an interdependency of the plurality of cells and generating and storing a directed graph of the interdependency as an execution flow; and

means for executing the specification in accordance with the execution flow, wherein the executing comprises evaluating the formula of each cell in the execution flow
means for receiving at execution time, a data processing specification having a first and a second data processing cell specifications, unnested with respect to each other, specifying a first and a second data processing cell, with each data processing cell specification having a plurality of statements including a formula specifying an action or computation, the first data processing cell having a data dependency of the second data processing cell based on a reference to the second data processing cell in the formula that requires computation of the second data processing cell to evaluate the formula;

means for analyzing in real time, the data processing specification in a first pass through of the data processing specification to determine an execution order of said plurality of statements specified by said first and second data processing cell specifications, based at least in part on interaction or computation references between said actions or computations specified;

means for generating one or more execution flow descriptions describing the execution order of said plurality of statements of said first data processing cell specification based on results of the determination; and

means for effectuating the data processing specified by the data processing specification, wherein the data processing specified by the data processing specification is executed in accordance with the execution flow descriptions.

22-25. (Cancelled).